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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,537	03/29/2004	Terrence Dwight Bender	B94.2-11495US01	2279
490	7590	10/04/2005		
VIDAS, ARRETT & STEINKRAUS, P.A. 6109 BLUE CIRCLE DRIVE SUITE 2000 MINNETONKA, MN 55343-9185			EXAMINER ELDRED, JOHN W	
			ART UNIT 3644	PAPER NUMBER

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/811,537	Applicant(s) BENDER, TERRENCE DWIGHT	
	Examiner J. Woodrow Eldred	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14, 16-20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the phrase "each vent slot having a planar axis" is vague and indefinite. An axis cannot be a plane, so it is assumed that this must mean an axis in relation to a plane, but the relation is not made clear, nor is it clear how the plane is referenced to the vent slot. In claim 22, it is not clear how either a plane or an axis can have curvature.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 21 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Breuer (2003/0154849).

See especially Figures 1 and 2. Note that the arbitrary "first" and "second" groups of vents can be chosen so that each vent slot is covered by the tubular cover wall (i.e. those vent slots directly below cover slots 17 are not chosen to be in the first or second groups.)

Art Unit: 3644

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (4,930,369) in view of Buss (5,814,757).

Johnson discloses a muzzle brake comprising the claimed elements, including a body having an internal plenum space, a plurality of angled vent slots communicating with the plenum, and a series of enlarged spaces within the plenum in addition to the projectile path. Each vent of Johnson has an arbitrary plane associated with it and each plane has an axis perpendicular to it. Johnson fails to disclose having a tubular cover with ports arranged over the body and with the ports in communication with the slots. See especially Figures 2 and 6, and their respective explanations in the specification. Buss teaches that it is well known to provide a ported tubular cover around a vented muzzle brake body. See especially Figures 1 and 3 and column 1, line 48-column 2, line 30. Motivation to combine is Buss' teachings that the outer cover helps improve performance by redirecting the sound away from the shooter in a more efficient manner. To apply the teachings of Buss' on the muzzle brake of Johnson and have an outer ported tubular cover is considered to have been obvious to one having ordinary skill in the art.

7. Claims 4, 7, 9, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (4,930,369) in view of Buss (5,814,757) as applied to claims 1-3, 8, and 10 above, and further in view of McClain III (5,036,747).

Johnson and Buss fail to disclose modifying the area of the respective vents located along the length of the muzzle brake. McClain III teaches that it is known to have vents of different size in a muzzle brake. See especially column 8, lines 31-38. McClain III also teaches that it is known to have plenum expansion chambers of constant diameter. See

Art Unit: 3644

especially Figures 11 and 12. Motivation to combine is McClain's teaching that the different size vents allows metering that more efficiently uses the vent gas (column 8, lines 36-38) and the substitution of known chamber geometries to perform the same gas expansion function, with the advantages of easier manufacturing than angled chambers and a greater volume of expansion space. To employ the teachings of McClain III and Buss on the muzzle brake of Johnson and have the claimed different sized vents and constant diameter chambers is considered to have been obvious to one having ordinary skill in the art.

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (4,930,369) in view of Buss (5,814,757) as applied to claims 1-3, 8, and 10 above, and further in view of Chahin (4,869,151).

Johnson and Buss fail to disclose modifying the vent slot angles of the respective vents located along the length of the muzzle brake. Chahin teaches that it is known to have vents with different angles located along the length of the muzzle brake. See especially Figure 2. Motivation to combine is the different performance available from tailoring the angles of the vents in order to provide the desired forces from the gases exhausted from the vents. To employ the teachings of Chahin and Buss on the muzzle brake of Johnson and have the claimed different angled vents is considered to have been obvious to one having ordinary skill in the art.

9. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chahin (4,869,151) in view of Buss (5,814,757) and Aston (4,322,999).

Chahin discloses a muzzle brake comprising the claimed elements, including a body having an internal plenum space, a plurality of slanted vent slots communicating with the plenum, and where at least two vents are arranged at different slant angles to each other. Chahin fails to disclose having a tubular cover with ports arranged over the body and with the ports in communication with the slots, or to disclose the vents raked toward the forward (i.e. "first") end of the muzzle body. See especially Figure 2 and the respective explanation in the specification. Buss teaches that it is well known to provide a ported

Art Unit: 3644

tubular cover around a vented muzzle brake body. See especially Figures 1 and 3 and column 1, line 48-column 2, line 30. Motivation to combine is Buss' teachings that the outer cover helps improve performance by redirecting the sound away from the shooter in a more efficient manner. To apply the teachings of Buss' on the muzzle brake of Chahin and have an outer ported tubular cover is considered to have been obvious to one having ordinary skill in the art. Aston teaches that it is known to have vent slots on a muzzle vent system raked in a forward direction. See especially Figures 1, 5 and 6, and vents 12, 14, 16, and 26, 28, 30. Motivation to combine is mere substitution of known vents in order to gain the advantage taught in column 6, lines 50-61, that forward angled vents exhaust the gas away from the firearm user. To employ the teachings of Aston on the firearm of Chahin and have the vents raked forward is considered to have been obvious to one having ordinary skill in the art.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chahin (4,869,151) in view of Buss (5,814,757) and Aston as applied to claims 17 and 19 above, and further in view of McClain III (5,036,747).

Chahin and Buss fail to disclose modifying the area of the respective vents located along the length of the muzzle brake. McClain III teaches that it is known to have vents of different size in a muzzle brake. See especially column 8, lines 31-38. Motivation to combine is McClain's teaching that the different size vents allows metering that more efficiently uses the vent gas (column 8, lines 36-38). To employ the teachings of McClain III and Buss on the muzzle brake of Chahin and have the claimed different sized vents is considered to have been obvious to one having ordinary skill in the art.

11. Claims 1-4, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (4,930,369) in view of Buss (5,814,757) and Hanslick et al (2005/088829).

Johnson discloses a muzzle brake comprising the claimed elements, including a body having an internal plenum space, a plurality of angled vent slots communicating with the plenum, and a series of enlarged spaces within the plenum in addition to the projectile path. Johnson fails to disclose having a tubular cover with ports arranged over the body and with the

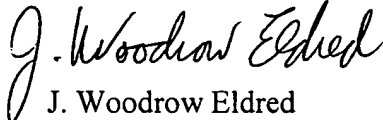
Art Unit: 3644

ports in communication with the slots or a vent slot with first and second non-parallel sides. See especially Figures 2 and 6, and their respective explanations in the specification. Buss teaches that it is well known to provide a ported tubular cover around a vented muzzle brake body. See especially Figures 1 and 3 and column 1, line 48-column 2, line 30. Motivation to combine is Buss' teachings that the outer cover helps improve performance by redirecting the sound away from the shooter in a more efficient manner. Hanslick et al teach that it is known to have muzzle brake vents that have two non-parallel sides. See vent 20 in Figure 1. Motivation to combine is the mere substitution of known vents in order to provide the desired venting characteristics for a particular situation. To apply the teachings of Buss and Hanslick et al on the muzzle brake of Johnson and have an outer ported tubular cover and a vent with two non-parallel sides is considered to have been obvious to one having ordinary skill in the art.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Woodrow Eldred whose telephone number is 571-272-6901. The examiner can normally be reached on Monday to Thursday, from 8:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


J. Woodrow Eldred
Primary Examiner
Art Unit 3644

JWE